

To: Distribution  
From: David M. Jordan  
Date: November 4, 1974  
Subject: System Maintenance Status, September 7 - November 1

## 1. Significant Events

A new reliability record was set during the week of October 14 as Multics ran for over 7 days and 17 hours without a system failure, thus surpassing the previous record set in September of 1970.

MIT ran a five day clinic to help people stop smoking, and a number of PDD and IPC people (myself included) attended. At last count about half the people who had attended were still not smoking.

A new version of the PL/1 (and Fortran) compiler was installed. If the number of MPRF's being received is an accurate indication this is a very good PL/1 compiler, although some previously expected problems exist with Fortran.

The new I/O interfacers (to replace the GIM) was installed with only a few problems. The most serious difficulties came with the attempt to install some new dims to make use of it. We haven't had enough experience with the ioi to tell yet if it is a major improvement, but indications so far point in that direction.

### A. Online System Installations

During the period from September 7 through November 1 there were 308 changes to the online libraries. Most notable among these were the installations of the new PL/1 and Fortran compilers. At this time major installations for lisp, basic, and debug are in the works and should be installed soon.

### B. Other Installations

During the period from September 7 through November 1 hardcore systems 23.18 - 24.1c were installed. Most important of these were a new Version 2 NCP, a revision to error handling/signalling, a new PL/1 runtime environment, a new algorithm for handling initial procedures, and the new I/O interfacers system.

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### C. Crash Analysis

During this period system reliability was quite good, with an overall rate of 1.09 crashes/day. In addition, a new record was established for continuous failure free operation as we went 7 days 17 hours without a crash. However, some problems still remain, especially in the hardware area, and no obvious long-range solutions exist. In addition, operations occasionally exhibits a surprizing lack of judgement in handling these problems thus multiplying the real affect on the system and users.

	Sep 7-13	Sep 14-20	Sep 21-27	Sep 28-4	Oct 5-11	Oct 12-18	Oct 19-25	Oct 26-1	Nov	Total
Hardware	6	8	1	1	9	2	4	7		38
Hardware Suspected	0	2	1	0	0	0	0	0		3
Software	2	4	4	1	2	0	1	0		14
Software Suspected	0	0	0	0	0	0	0	0		0
Not Yet Analyzed	1	0	0	0	0	0	0	1		2
Not Analyzable	1	0	0	0	1	0	1	0		3
Other	1	2	1	1	0	0	1	0		6
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Total	11	16	7	3	12	2	7	8		66

### 2. Problem Areas

At this time the only major problem we seem to be faced with is the lack of reliable hardware. While its true that we have our usual quota of minor difficulties, the hardware problem has been with us for years and, except for short periods of reliability, it appears that the problem will remain forever.

### 3. Task Status

Arlene's work on the Unbundled library and recompilations is essentially complete. At this point about all that remain are the actual installation of some procedures and perhaps a little cleaning up of ec's and so on. Grace finally got an MCR approved for the user notification (of backup problems) changes. At this time she's checking out the system on the development side. In addition, she has essentially completed an updated version of test\_tape with provisions for the MTS-500's, etc. Peter continues has update\_seg tasks, with the completion of several tasks this month and the addition of several new tasks. In addition, he has pretty much taken over responsibility for crash analysis.

In addition to the above tasks, Peter, Arlene and Grace have been enlisted to help Gary with the library tools. It is hoped that in this way most of the work required can be completed by December 31 - in time for inclusion in the HISI release MR 2.1.

#### 4. Work Planned for the Coming Month

During the next month we hope to make some significant progress on the library tools. In addition, we expect to get the hardcore system to a point where it makes sense to create a new version of the salvager. Also, we hope to give Grace a chance to learn some crash analysis.









TASK AREA Programming Support

TASK DESCRIPTION	PERSONNEL	START	FINISH	CHANGES/STATUS
Look into compare source statement as replacement for cpa				Compare p11 source statements ignoring differences in comments and formatting
Design and implement an online system for registering modules being worked on, etc.				Proposal submitted to Gintell. Hope he has man-power
Look into the possibility of maintaining a module change history log.				May be part of sign out log project
Look into the possibility of making the source libraries generally accessible to users				
Create a system for processing backup error files to allow notification to users of errors encountered	Ackerman-Lewis	5/1/74	6/15/74	MCR approved, being tested
Fix test-tape to work with MTS 500's, ioi, etc.	Ackerman-Lewis	5/1/74	11/30/74	
		9/15/74	11/30/74	Code and testing complete, yet to be installed



PROJECT Library Maintenance Tools Project AREA Installation tool enhancements

TASK DESCRIPTION	PERSONNEL	SIARI	FINISH	M-W	CHANGES-SIAIUS
MIS: Write Honeywell PLM - Library Maintenance Manual	Kelley				contInuing
update_seg: modify documentation task to document unbundled library (MCR 735)	Kelley				Installed
update_seg: modify to set the default max length of segments to their current length; add option to set length if different from current length. (MCR 807)	Kelley	10/29/74	11/08/74		MCR approved
update_seg: fix bug in documentation program (MCR 819)	Kelley	10/21/74	10/25/74		checking out
cleanup: modify to use the library descriptor	Kelley	11/04/74	11/18/74		

PROJECT Library Maintenance Tools Project AREA Library descriptor tools

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-SIAIUS
lex_string; code a lexical analyzer to parse a character string into tokens which are processed by the compilers below	Dixon	12/15/73	01/10/74	.5	Done
reduction_compiler (rdc): code the reduction compiler (used to code the library_descriptor_compiler)	Dixon	01/01/74	02/11/74	2.0	Done
library_descriptor_compiler (ldc): code the library descriptor data base compiler	Dixon	12/15/73	01/10/74	2.0	Done
multics_libraries_ld: code the library descriptor for Multics	Dixon	02/28/74	03/01/74	.2	Done
System_Libraries					
multics_library_search; recode to use multics_libraries_ld generated by library_descriptor_compiler	Dixon	03/01/74	10/20/74	.5	Done
library_info (li): code, document command which replaces msl_info (HIGH)	Dixon	10/05/73	10/30/73	1.5	Add options to command
library_map (lm): code, document command which replaces msl_global_format (HIGH)	Dixon	05/25/73	06/25/73	3	Done
library_print (lpr): code, document command which prints groups of library_segments (HIGH)	Dixon	05/10/73	04/01/73	1	Done
li/lm: get and output ACLs, initial ACLs, extra status (MEDIUM)	Dixon	12/15/73	12/30/73	1.5	
li/lm/lpr: add sorting options to commands (LOW)	Dixon	01/01/74	01/15/74	.5	
document the above procedures and subroutines	Dixon	03/01/74	05/30/74	3	MTB being written

PROJECT Library Maintenance Tools Project AREA \_\_\_\_\_ Library descriptor tools

TASK DESCRIPTION	PERSONNEL	SIARI	FINISH	M-M	CHANGES-SIARIUS
lm/lpr: gather and output statistics on Library segments (LOW)	Dixon			1.5	
library_descriptor (las): code, document command which lists directories searched by li/lm/lpr for a given library (LOW)	Ackerman-- Lewis	11/04/74 11/04/74	12/20/74	1	Command documentation complete
library_get (lgt): rewrite gis to use library descriptor	Scherer	10/21/74 10/21/74	12/30/74	2	
library_cleanup (lcln): clean up the code; use library descriptor	Kelley	11/04/74 11/04/74	12/30/74	1.5	
library_object_cref (loc): rewrite cross_reference to use library_descriptor				2.5	
library_include_cref (lic): rewrite icref to use library_descriptor & source maps in standard obj segs				2	
library_check (lck): write program to check on consistency of libraries	Ackerman-- Lewis			3	

